-10-

CLAIMS

What is claimed is:

1.   A method for managing transmission constraints based on subscriber device capabilities comprising:

      5   determining a set of device capabilities corresponding to a transceiver device;

        registering the device capabilities with a remote wireless transceiver device;

        computing a set of transmission constraints based on the device

    10   capabilities; and

        applying the transmission constraints corresponding to the transceiver device to transmissions between the transceiver device and the central transceiver device.

    15 2.   The method of claim 1 wherein the transceiver device is a wireless subscriber access unit and the central transceiver device is a base station processor.

3.   The method of claim 1 wherein the transmission constraints include parameters selected from the group consisting of transmission power, forward error

    20   correction (FEC) coding rate, and modulation.

4.   The method of claim 1 wherein the device capabilities include parameters selected from the group consisting of fixed, mobile, and pedestrian.

5.   The method of claim 1 wherein the device capabilities further include antenna characteristics.

6. The method of claim 5 wherein the device capabilities are indicative of an antenna array.

7. The method of claim 6 wherein the antenna array comprises one radiating element.

5   8. The method of claim 6 wherein the antenna array comprises 5 radiating elements.

9. The method of claim 5 wherein the antenna characteristics include characteristics selected from the group consisting of omnidirectional, one degree of freedom, and multiple degrees of freedom.

10   10. The method of claim 1 wherein computing the transmission constraints further comprises computing transmission constraints in response to observed transmission characteristics.

11. The method of claim 10 wherein the observed transmission characteristics include characteristics selected from the group consisting of bit error rate (BER), interference level, dropped packets, and received power level.

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12. The method of claim 9 wherein applying the transmission constraints include allocating a greater data rate to a subscriber corresponding to an antenna having at least one degree of freedom than to a subscriber corresponding to an omnidirectional antenna.

20   13 The method of claim 4 wherein the transmission constraints limit the power level when the device capabilities indicate mobile.

14. The method of claim 4 wherein the power level to 23dBm when the device capabilities indicate mobile.

15. The method of claim 4 wherein the transmission constraints include transmitting at an increased power level when the device capabilities indicate fixed.

5   16. The method of claim 4 wherein the transmission constraints include a power level greater than 23dBm when the device capabilities indicate fixed.

17. The method of claim 2 wherein the device capabilities are received from a centrally located database in electronic communication with the base station

10   processor.

18. The method of claim 17 wherein the centrally located database stores a predetermined sets of data.

19. The method of claim 17 wherein the centrally located data base is a wireless Internet facility (WIF).

15   20. The method of claim 2 wherein the device capabilities are stored at the Subscriber Access Unit and are sent by the subscriber access unit to the base station processor.

21. A system for managing transmission constraints in a wireless network comprising:

20   a plurality of wireless transceiver devices operable to transmit and receive wireless messages, the wireless transceiver devices having device capabilities;

a registration manager operable to compute transmission constraints for the wireless transceiver devices based on the device capabilities; and

a capacity manager operable to apply the transmission constraints to at least one of the wireless transceiver devices.

5   22.   The system of claim 21 further comprising a registration database operable to store the device capabilities corresponding to the wireless transceiver devices.

23.   The system of claim 21 wherein the transceiver devices further comprise wireless subscriber access units and base station processors, wherein the registration manager is in the base station processor.

10   24.   The system of claim 21 wherein the transmission constraints include parameters selected from the group consisting of transmission power, forward error correction (FEC) coding rate, and modulation.

25.   The system of claim 21 wherein the device capabilities include parameters selected from the group consisting of fixed, mobile, and pedestrian.

15   26.   The system of claim 21 wherein the device capabilities further include antenna characteristics.

27.   The system of claim 26 wherein the device capabilities are indicative of an antenna array.

28.   The system of claim 27 wherein the antenna array comprises one radiating

20   element.

29. The system of claim 27 wherein the antenna array comprises 5 radiating elements.

30. The system of claim 26 wherein the antenna characteristics include characteristics selected from the group consisting of omnidirectional, one degree of freedom, and multiple degrees of freedom.

31. The system of claim 21 wherein the registration manager is further operable to compute the transmission constraints in response to observed transmission characteristics.

32. The system of claim 31 wherein the observed transmission characteristics include characteristics selected from the group consisting of bit error rate (BER), interference level, dropped packets, and received power level.

33. The system of claim 30 wherein the transmission constraints include allocating greater data rate to a subscriber corresponding to an antenna having at least one degree of freedom than to a subscriber corresponding to an omnidirectional antenna.

34. The system of claim 25 wherein the transmission constraints limit the power when the device capabilities indicate mobile

35. The system of claim 25 wherein the transmission constraints limit the power level to 23dBm when the device capabilities indicate mobile.

36. The system of claim 25 wherein the transmission constraints increase the power level when the device capabilities indicate fixed.

37. The system of claim 25 wherein the transmission constraints include a power level greater than 23dBm when the device capabilities indicate fixed.

38. The system of claim 23 wherein the device capabilities are received from a centrally located database in electronic communication with the base station processor.

39. The system of claim 23 wherein the centrally located database is a wireless Internet facility (WIF).

40. The system of claim 23 wherein the device capabilities are sent by the subscriber access unit to the base station processor.

41. A computer program product having computer program code for managing transmission constraints based on subscriber device capabilities comprising:
    computer program code for determining a set of device capabilities corresponding to a transceiver device;
    computer program code for registering the device capabilities with a central wireless transceiver device;
    computer program code for computing a set of transmission constraints based on the device capabilities; and
    computer program code for applying the transmission constraints corresponding to the transceiver device to transmissions between the transceiver device and the central transceiver device.

42. A computer data signal for managing transmission constraints based on subscriber device capabilities comprising:
    program code for determining a set of device capabilities corresponding to a transceiver device;

program code for registering the device capabilities with a central wireless transceiver device;

program code for computing a set of transmission constraints based on the device capabilities; and

5   program code for applying the transmission constraints corresponding to the transceiver device to transmissions between the transceiver device and the central transceiver device.

43.   A system for managing transmission constraints in a wireless network
10   comprising:

means for determining a set of device capabilities corresponding to a transceiver device;

means for registering the device capabilities with a central wireless transceiver device;

15   means for computing a set of transmission constraints based on the device capabilities; and

means for applying the transmission constraints corresponding to the transceiver device to transmissions between the transceiver device and the central transceiver device.